

Student Name: \_\_\_\_\_

# Ohio Achievement Assessments



## Mathematics Student Test Booklet Spring 2011

*This test was originally administered to students in Spring 2011.*

*Not all items from the Spring 2011 administration will be released in this document. According to Ohio Revised Code (ORC) 3301.07.11:4(b) . . . not less than forty percent of the questions on the test that are used to compute a student's score shall be a public record. The department (of education) shall determine which questions will be needed for reuse on a future test and those questions shall not be public records and shall be redacted from the test prior to its release as public record.*

*This publicly released material is appropriate for use by Ohio teachers in instructional settings. This test is aligned with Ohio's Academic Content Standards for Mathematics.*

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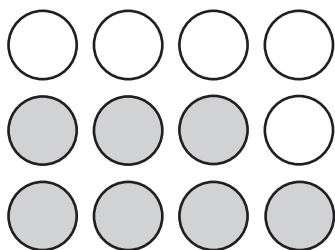
**Directions:**

Today you will be taking the Ohio Grade 6 Mathematics Achievement Assessment. Three different types of questions appear on this test: multiple choice, short answer and extended response.

There are several important things to remember:

1. Read each question carefully. Think about what is being asked. Look carefully at graphs or diagrams because they will help you understand the question. Then, choose or write the answer you think is best.
2. Use only a #2 pencil to answer questions on this test. You may use a calculator on this test.
3. For multiple-choice questions, fill in the circle next to your answer choice. Mark only one answer for each question. If you change your answer, make sure you erase your old answer completely. Do not cross out or make any marks on the other choices.
4. For constructed-response questions, write your answer neatly, clearly and only in the space provided in your Answer Document. Any responses written in your Student Test Booklet will not be scored.
5. Short-answer questions are worth two points. Extended-response questions are worth four points. Point values are printed near each question in your Student Test Booklet. The amount of space provided for your answers is the same for all two- and four-point questions.
6. You may use the blank areas of your Student Test Booklet or the optional grid paper in your Answer Document to work out and solve problems. Do not tear out the optional grid paper from your Answer Document.
7. If you do not know the answer to a question, skip it and go on to the next question. If you have time, go back to the questions you skipped and try to answer them before turning in your Student Test Booklet and Answer Document.
8. Check over your work when you are finished.
9. When you finish this section of the test, you may **NOT** go back to the reading section in the Student Test Booklet.

1. An arrangement of circles is shown.



What is the ratio of shaded circles to unshaded circles?

A.  $\frac{5}{12}$

B.  $\frac{7}{12}$

C.  $\frac{5}{7}$

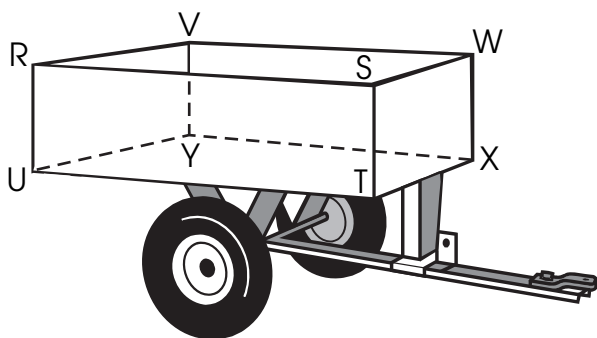
D.  $\frac{7}{5}$

Item 2 has not been slated for public release in 2011.

3. Which expression represents  $7^4$ ?

- A.  $7 \times 4$
- B.  $7 + 4$
- C.  $7 \times 7 \times 7 \times 7$
- D.  $4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

4. Jill built the wagon shown.

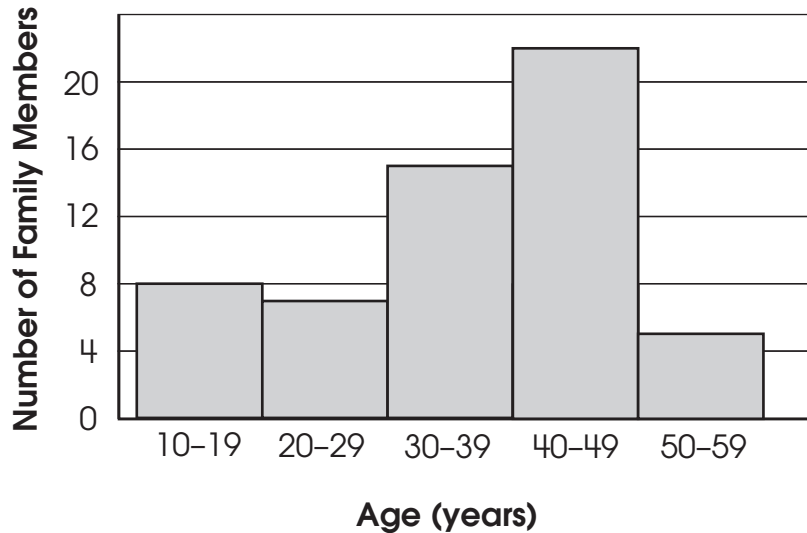


Which pair of planes are parallel?

- A. RSTU and VYUR
- B. UYXT and VYUR
- C. RSTU and VWXY
- D. UYXT and VWXY

5. Tom went to his family reunion. The histogram shows the ages of Tom's family members who were at the family reunion.

**Ages at a Family Reunion**



Which **cannot** be determined from these data?

- A. number of family members at the reunion
- B. age of the oldest family member at the reunion
- C. number of family members older than 39 at the reunion
- D. number of family members younger than 20 at the reunion

6. In your **Answer Document**, state one property that squares and rhombuses share. Then state one property that one of these shapes has but the other shape does not necessarily have.

For question 6, respond completely in your **Answer Document**. (2 points)

7. While standing outside Carmen's Computer Store, Phyllis noticed that 14 people left the store and 10 people entered the store. Later, 5 more people entered and 13 people left.

What was the net increase or decrease in the number of people in Carmen's Computer Store?

- A. an increase of 12
- B. a decrease of 12
- C. an increase of 42
- D. a decrease of 42



Items 8–9 have not been slated for public release in 2011.

10. A number pattern is shown.

1, 4, 10, 22, 46, ...

Which rule describes how to find the next term in the pattern?

- A. Add 3 to the previous term.
- B. Add 24 to the previous term.
- C. Multiply the previous term by 2, then add 1.
- D. Add 1 to the previous term, then multiply by 2.





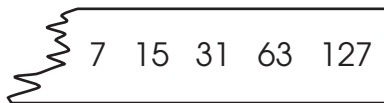
Item 11 has not been slated for public release in 2011.

On the Spring 2011 Grade 6 Mathematics Achievement Assessment, items 12–17 are field-test items, which are not released.

Items 18–25 have not been slated for public release in 2011.



26. Steve found a piece of paper with the numbers of a pattern written on it as shown.



The paper was ripped, and the first two numbers in the pattern were missing.

In your **Answer Document**, state a rule for the pattern.

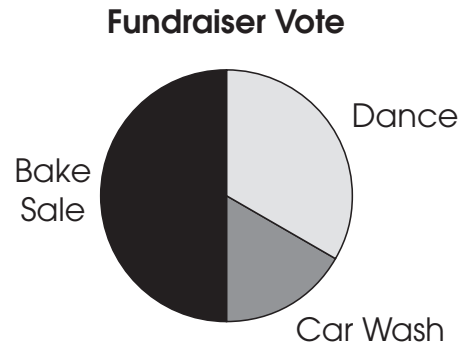
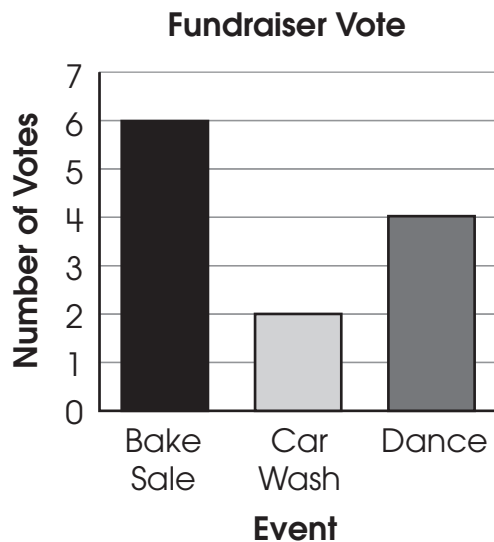
Then, show how to use your rule to find the first two numbers in the pattern.

For question 26, respond completely in your **Answer Document**. (2 points)

Items 27–29 have not been slated for public release in 2011.



30. A club surveyed its members about what kind of fundraiser they would like to have. The data are shown.



Which statement describes how the two graphs are different?

- A. Only one graph shows the actual number of votes.
- B. Only one graph shows that half voted for the bake sale.
- C. Only one graph shows that the car wash is the least popular.
- D. Only one graph shows that more students voted for the dance than for the car wash.

31. Ms. Mason is packaging science supplies for groups of students. She has 40 hand lenses, 32 pairs of tweezers and 28 pens. She wants to package the supplies so that every group has the same number of hand lenses, tweezers and pens.

In your **Answer Document**, use prime factorization to determine the greatest number of packages she can make without having leftover items.

Then, determine the number of lenses, tweezers and pens that will be in each package.

Show how you determined your answer.

For question 31, respond completely in your **Answer Document**. (2 points)

32. The Tasty Soup Company uses 200 square inches of material to make each 500-milliliter soup can.

What does the 200 square inches represent?

- A. the height of the can
- B. the volume of the can
- C. the perimeter of the can
- D. the surface area of the can

Items 33–35 have not been slated for public release in 2011.



36. The number of Jeff's Diners from 2000 to 2003 is shown.

Year	Number of Locations
2000	109
2001	221
2002	333
2003	439

In your **Answer Document**, create an appropriate graph of these data to predict the number of restaurant locations for 2007. Be sure to give your graph a title and labels.

Explain how you predicted the number of restaurants in 2007.

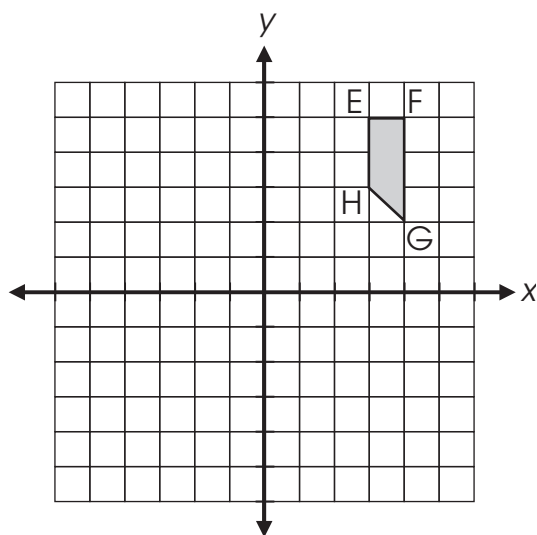
For question 36, respond completely in your **Answer Document**. (4 points)

37. Which estimate is closest to the sum of  $2\frac{2}{10}$  and  $4\frac{7}{8}$ ?

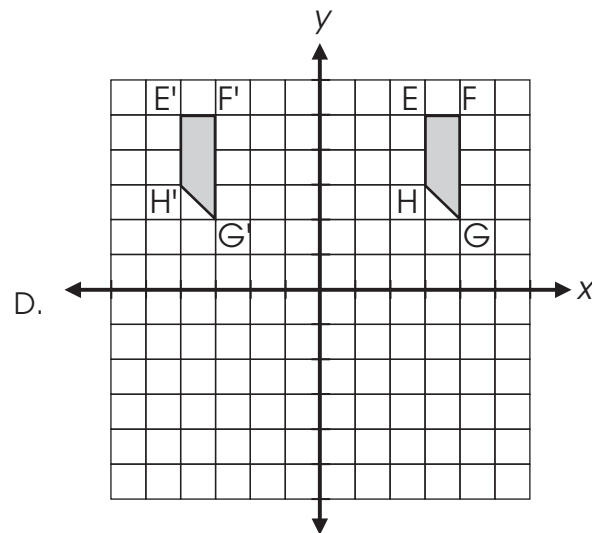
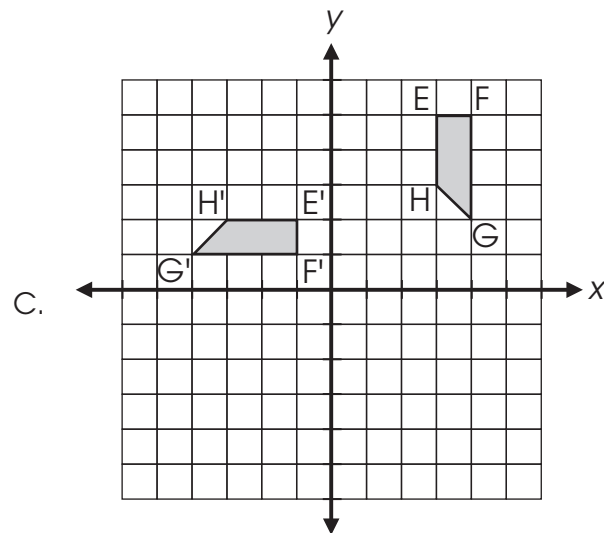
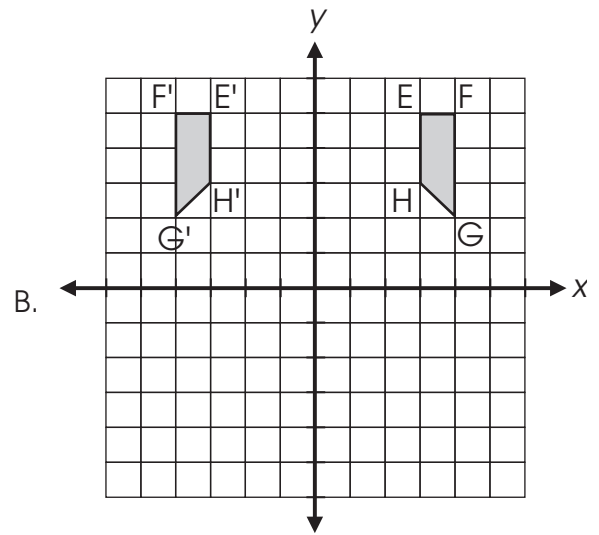
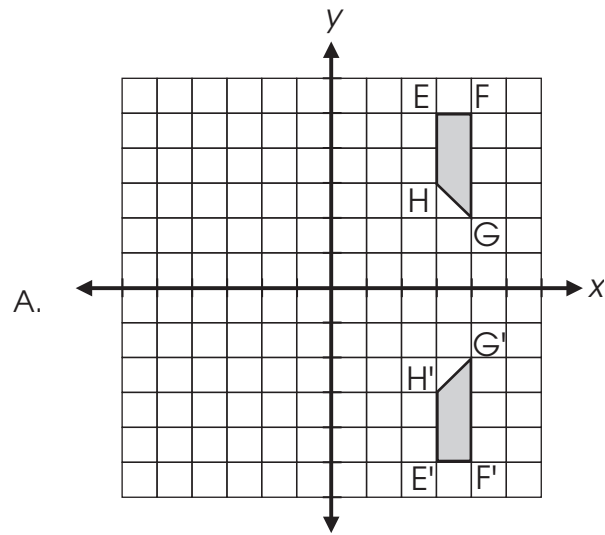
- A. 6
- B. 7
- C. 8
- D. 70

Items 38–41 have not been slated for public release in 2011.

42. Figure EFGH is shown on the grid.



Which grid shows a reflection of the shaded figure across the  $y$ -axis?



# M

## Mathematics

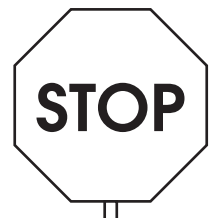
43. Which situation shows change occurring at a constant rate?
- A. the movement of a car in a traffic jam
  - B. the movement of a second hand around a clock
  - C. the movement of the wind over a 24-hour period
  - D. the movement of a basketball player on the court in a game

44. Simplify the expression by using order of operations:

$$4^3 \div (4 \times 2)$$

- A. 1.5
  - B. 6
  - C. 8
  - D. 32
45. What is the value of  $10m - 2k$  when  $k = 2$  and  $m = 5$ ?

- A. 10
- B. 46
- C. 54
- D. 83





M